UNIVERSITI TEKNOLOGI MARA

GROWTH RESPONSES OF *Mucuna bracteata* TO APPLICATION OF TEBUCONAZOLE

NUR AMIRAH BINTI JUWAHIR

Final year project report submitted in
partial fulfillment of the requirements for the degree of
Bachelor of Science (Hons.)
Plantation Technology and Management

Faculty of Plantation and Agrotechnology

JANUARY 2015

APPROVAL SHEET

This Final Year Project report entitled **"Growth Responses Of *Mucuna Bracteata* To Application Of Tebuconazole"** was submitted by **Nur Amirah Binti Juwahir**, in partial fulfilment of the requirements for the Degree of Bachelor of Science (Hons.) Plantation Technology and Management, in the Faculty of Plantation and Agrotechnology, and was approved by

DR TSAN FUI YING
Supervisor
Faculty of Plantation and Agrotechnology
University Teknologi MARA
Jasin, Melaka

MISS WAN NATASYA WAN AHMED
Project Coordinator
BSc. (Hons) Plantation
Technology and management
Faculty of Plantation And
Agrotechnology
University Teknologi MARA
Jasin, Melaka

MISS NORDIANA BINTI IBRAHIM
Head of Study Center
BSc. (Hons) Plantation
Technology and management
Faculty of Plantation And
Agrotechnology
University Teknologi MARA
Jasin, Melaka

Date: _____

DECLARATION

This final year project is a partial fulfillment of the requirement for a degree of Bachelor of Science (Hons.) Plantation Technology and Management, Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA.

It is entirely my own work and has not been submitted to any other University or higher education institutions, or for any other academic award in this University. Where use has been made of the work of other people it has been fully acknowledged and fully referenced.

I hereby assign all and every right in the copyright to the Universiti Teknologi MARA ("UiTM"), which henceforth shall be the owner of the copyright in this work and that, any reproduction or use in any form or by any means whatsoever is prohibited without a written consent of UiTM.

Candidate's signature: ..... Date: 17 JANUARY 2015

Name: NUR AMIRAH BINTI JUWAHIR

I hereby declare that I have checked the project and in my opinion, this project is adequate in terms of scope and quality for award of the degree of Bachelor of Science (Hons.) Plantation Technology and Management, Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA.

Signature: .....

Name of Supervisor: DR. TSAN FUI YING

Position: SENIOR LECTURER

Date: 17/1/15

TABLE OF CONTENTS

		Page
ACKNOWLEDGEMENTS		iii
TABLE OF CONTENTS		iv
LIST OF TABLES		vi
LIST OF FIGURES		vii
LIST OF ABBREVIATIONS		viii
ABSTRACT		ix
ABSTRAK		x
CHAPTER 1 INTRODUCTION		1
1.1	Background of cover crop (*Mucuna bracteata*)	1
1.2	Problem statement	3
1.3	Research question	3
1.4	Objectives of study	3
1.5	Significant of study	3
1.6	Limitation of study	4
CHAPTER 2 LITERATURE REVIEW		5
2.1	Description of *Mucuna bracteata*	
2.2	Soil suitability	9
2.3	Uses of *Mucuna bracteata*	9
2.4	Available control for *Mucuna bracteata*	9
2.5	Effects plant growth retardants to plant	10
2.6	Tebuconazole	11
CHAPTER 3 MATERIALS AND METHODS		12
3.1	Location of study	12
	3.2.1 Tebuconazole suspension	13
	3.2.2 Measuring cylinder	13
	3.2.3 Hand sprayer	13
	3.2.4 Ruler/ measuring tape	13
	3.2.5 SPAD 502	14
	3.2.6 Graph paper	14
	3.2.7 Watering can	14
	3.2.8 Venier caliper	14
3.3	Experimental procedure	15
	3.3.1 Transplanting *M. Bracteata*	15
	3.3.2 Maintenance	13
	3.3.3 Soil sampling	15
	3.3.4 pH	16
	3.3.5 Soil texture	17
	3.3.6 Preparation of tebuconazole suspensions	21
	3.3.7 Application of tebuconazole	22
3.4	Data collection	22
	3.4.1 Length of the internodes	22
	3.4.2 Diameter of vines	23

3.4.3 Sizes of the leaf (leaf area) 23
3.4.4 Relative chlorophyll content of leaf 24
3.4.5 Number of shoots 24
3.5 Experimental design 24
3.6 Statistical analysis 25
3.7 Schedule of work 26

CHAPTER 4 RESULTS 27

CHAPTER 5 DISCUSSION 31

CHAPTER 6 CONCLUSION AND RECOMMENDATION 33

CITED REFERENCES 34

APPENDICES 37

CURRICULUM VITAE 43

ABSTRACT

Growth Responses of *Mucuna bracteata* to Application of Tebuconazole

Mucuna bracteata was found in India. It has creeping behavior and can sustain drought condition. Besides, *M. bracteata* can also control soil erosion and improve soil condition. In Malaysia, it is normally grown in the oil palm or rubber estates as a cover crop but there are certain problems where the vigorous growth of this cover crop can affect the main crop. Hence, this study was aimed to control the growth of this cover crop using tebuconazole, a plant growth regulator. The growth performance of *M. bracteata* as responses to the application of tebuconazole was investigated and the optimum dosage of tebuconazole for controlling the vigorous growth of this cover crop was determined. This study was conducted in the field of Universiti Teknologi MARA, Jasin, Malacca based on a completely randomized design (CRD). The results indicated that tebuconazole was effective in inhibiting the growth of *M. bracteata*. The growth parameters studied were length of internodes, diameter of stem (vine), leaf area, relative chlorophyll content and number of shoots at first fully developed leaf. Among the different concentrations studied, the highest concentration of 300 mg/l was concluded the most effective in the inhibition of growth of *M. bracteata*.